

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P123741

Luminaire Tested: **EL406927-TLS408TBZBB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P123741
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13994)
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: EL406927-TLS408TBZBB
Description: HALO 4-INCH RECESSED LED DOWNLIGHT
SQUARE BLACK BAFFLE, SOLITE® LENS AND TUSCAN BRONZE RING
Light Source: (1)SURFACE MOUNT LED, 2700K CCT, 90CRI
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 630.0 lumens
Efficiency: N/A
Efficacy: 48.5 lumens/watt
Spacing Criteria (0/90/45): 0.68 / 0.68 / 0.71
Luminous Opening: Rectangular (W 0.21' x L: 0.21' x H: 0')
CIE Type: Direct

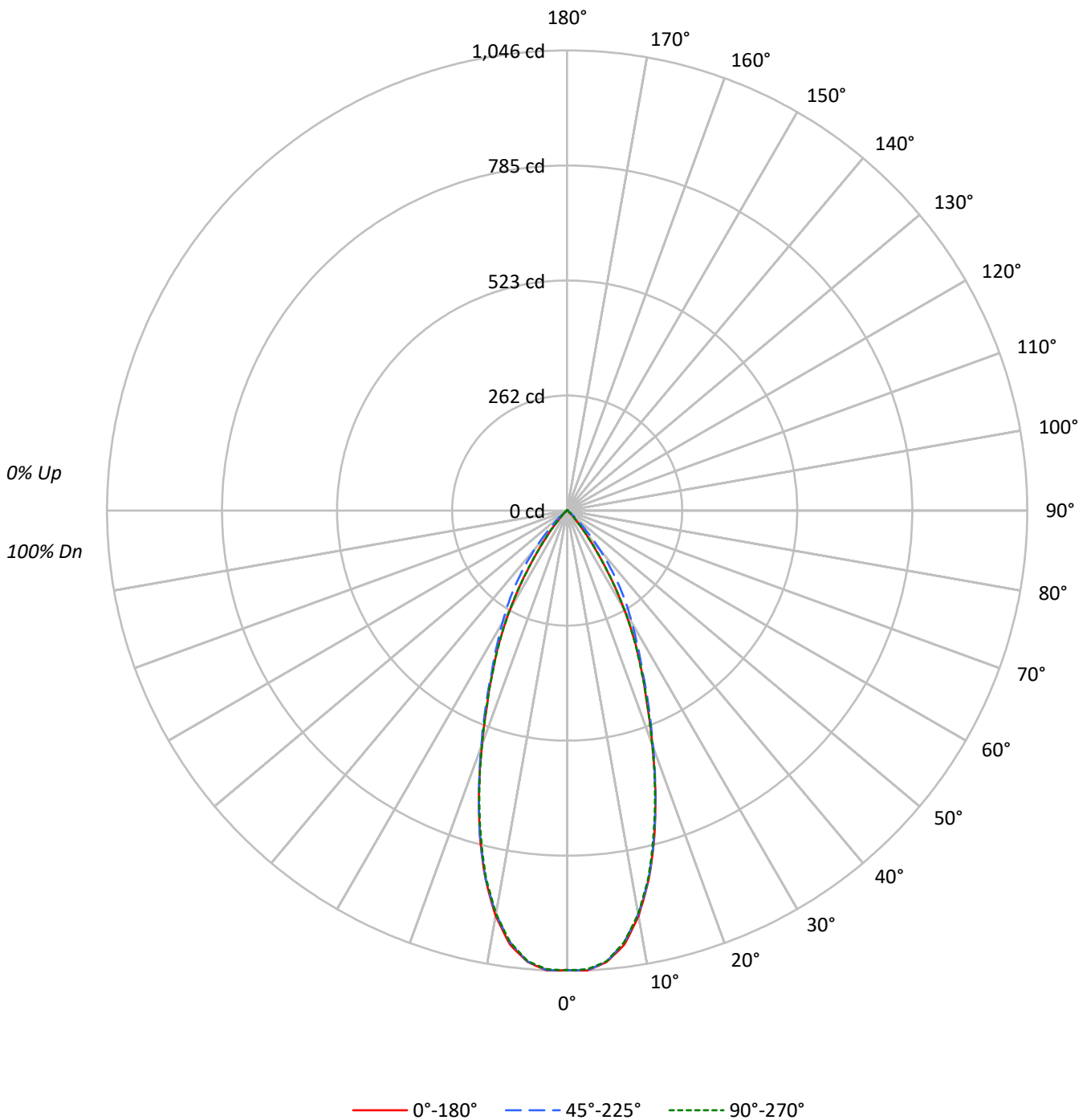
Input Watts (W): 13
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	107	102	99	96	99	96	94	96	94	92	94	92	90	89
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	85	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	81	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74
6	90	82	76	73	89	81	76	72	80	75	72	78	74	71	77	74	71	70
7	86	78	72	68	85	77	72	68	76	71	68	75	70	67	74	70	67	66
8	83	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	64	62
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59
10	76	67	61	58	75	66	61	58	66	61	58	65	61	58	64	60	57	56

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	259037	259037	259037
5°	256417	256193	255944
10°	235509	234552	234300
15°	196670	196414	195181
20°	149325	150591	149061
25°	109045	111152	108498
30°	74226	84192	74771
35°	39540	60914	40115
40°	16608	36648	16608
45°	6453	16975	6769
50°	2971	6713	2971
55°	2075	2940	2075
60°	942	1934	1438
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	1428	1428
85°	2845	0	5406



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.2	15.1
10°-20°	209.9	33.3
20°-30°	186.5	29.6
30°-40°	103.6	16.4
40°-50°	26.8	4.3
50°-60°	5.7	0.9
60°-70°	1.3	0.2
70°-80°	0.4	0.1
80°-90°	0.6	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	491.6	78.0
0°-40°	595.2	94.5
0°-60°	627.8	99.6
0°-90°	630.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	630.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1044	1044	1044	1044	1044	
5°	1030	1031	1029	1030	1028	95
15°	766	765	765	764	760	210
25°	398	403	406	402	396	183
35°	131	161	201	162	132	86
45°	18	26	48	27	19	17
55°	5	5	7	5	5	4
65°	0	0	0	0	0	1
75°	0	0	0	0	0	1
85°	1	1	0	0	2	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5
2.5°	1046.5	1047.4	1046.5	1047.4	1047.4	1046.5	1046.5	1046.5	1046.5	1045.5	1047.4
5°	1030.0	1030.0	1031.0	1032.0	1032.9	1030.0	1030.0	1031.0	1030.0	1029.1	1030.0
7.5°	995.2	995.2	992.3	994.2	993.3	993.3	992.3	992.3	991.3	990.4	991.3
10°	935.2	936.2	935.2	935.2	934.3	934.3	933.3	933.3	933.3	931.4	933.3
12.5°	857.9	858.8	857.9	857.9	855.0	855.0	855.9	855.0	856.9	856.9	855.0
15°	766.0	766.0	765.0	766.0	765.0	764.1	765.0	765.0	765.0	765.0	765.0
17.5°	666.4	666.4	666.4	666.4	665.4	666.4	666.4	666.4	667.3	666.4	669.3
20°	565.8	566.8	565.8	568.7	568.7	568.7	569.7	570.6	570.6	570.6	572.6
22.5°	473.9	475.8	475.8	477.8	477.8	479.7	479.7	481.6	483.6	484.5	483.6
25°	398.5	398.5	398.5	400.4	401.4	404.3	403.3	404.3	405.2	406.2	407.2
27.5°	329.8	330.8	332.7	336.6	340.4	342.4	344.3	345.3	346.2	346.2	348.2
30°	259.2	261.1	264.0	271.8	279.5	284.3	290.1	294.0	295.0	294.0	296.0
32.5°	191.5	194.4	198.3	206.0	214.7	224.4	234.1	242.8	246.6	247.6	247.6
35°	130.6	133.5	136.4	144.1	153.8	167.3	178.0	187.6	197.3	201.2	198.3
37.5°	84.1	85.1	89.0	95.7	104.5	116.1	128.6	141.2	151.8	154.7	152.8
40°	51.3	53.2	54.2	58.0	65.8	74.5	87.0	98.7	108.3	113.2	110.3
42.5°	30.0	31.9	32.9	36.8	39.7	46.4	53.2	64.8	72.5	76.4	74.5
45°	18.4	19.3	19.3	21.3	23.2	28.0	32.9	39.7	43.5	48.4	47.4
47.5°	12.6	13.5	14.5	14.5	15.5	18.4	21.3	27.1	28.0	30.0	29.0
50°	7.7	8.7	8.7	9.7	9.7	11.6	12.6	15.5	16.4	17.4	17.4
52.5°	5.8	7.7	7.7	7.7	9.7	8.7	9.7	9.7	11.6	10.6	11.6
55°	4.8	4.8	3.9	5.8	4.8	5.8	5.8	5.8	7.7	6.8	7.7
57.5°	4.8	3.9	2.9	3.9	2.9	3.9	5.8	2.9	4.8	4.8	4.8
60°	1.9	2.9	1.9	3.9	1.9	3.9	1.9	2.9	2.9	3.9	3.9
62.5°	1.9	2.9	1.9	3.9	2.9	1.9	1.9	1.9	1.9	1.9	2.9
65°	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
67.5°	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.9
70°	0.0	1.0	1.0	1.9	1.0	1.0	0.0	1.0	1.9	0.0	1.0
72.5°	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
77.5°	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
80°	0.0	1.0	0.0	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0
85°	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
87.5°	1.9	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5	1044.5
2.5°	1044.5	1044.5	1044.5	1045.5	1045.5	1045.5	1047.4	1043.6
5°	1028.1	1028.1	1029.1	1030.0	1030.0	1029.1	1031.0	1028.1
7.5°	991.3	990.4	990.4	993.3	990.4	989.4	990.4	989.4
10°	931.4	932.3	931.4	931.4	931.4	931.4	932.3	930.4
12.5°	854.0	855.0	854.0	854.0	854.0	853.0	855.0	853.0
15°	764.1	764.1	764.1	764.1	763.1	763.1	765.0	760.2
17.5°	667.3	666.4	667.3	667.3	666.4	665.4	665.4	663.5
20°	570.6	569.7	567.7	567.7	567.7	566.8	566.8	564.8
22.5°	481.6	479.7	481.6	478.7	476.8	475.8	475.8	475.8
25°	405.2	403.3	402.3	402.3	399.4	398.5	400.4	396.5
27.5°	345.3	344.3	343.3	339.5	338.5	333.7	330.8	327.9
30°	294.0	291.1	283.4	278.5	269.8	265.0	260.2	261.1
32.5°	241.8	234.1	225.3	214.7	205.0	199.2	195.4	191.5
35°	188.6	178.0	168.3	154.7	145.1	137.3	132.5	132.5
37.5°	142.2	129.6	117.0	105.4	95.7	89.9	86.1	84.1
40°	99.6	87.0	75.4	65.8	59.0	55.1	53.2	51.3
42.5°	67.7	55.1	46.4	40.6	36.8	33.9	32.9	30.9
45°	41.6	34.8	29.0	24.2	22.2	21.3	21.3	19.3
47.5°	26.1	22.2	20.3	17.4	15.5	13.5	13.5	13.5
50°	15.5	13.5	11.6	10.6	9.7	8.7	9.7	7.7
52.5°	9.7	8.7	8.7	7.7	6.8	7.7	6.8	10.6
55°	6.8	5.8	5.8	4.8	5.8	4.8	5.8	4.8
57.5°	3.9	2.9	5.8	2.9	3.9	2.9	3.9	1.9
60°	3.9	2.9	1.9	2.9	1.9	2.9	3.9	2.9
62.5°	1.0	1.9	1.9	2.9	2.9	1.9	1.9	2.9
65°	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0
67.5°	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
70°	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0
72.5°	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9
87.5°	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)